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Abstract # LA-UR-04-1620

Title: The Los Alamos National Laboratory 94/100-1 Materials  
Stabilization and Deinventory Project

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Form 836 (8/00)

## THE LOS ALAMOS NATIONAL LABORATORY 94/00-1 MATERIALS STABILIZATION AND DEINVENTORY PROJECT

Nancy M. Gallegos, Leo D. Urbina, Leo P. Archuleta, Elizabeth A. Ronquillo, Priscilla L. Davis,  
Simon Balkey, Wayne A. Punjak, Robert A. Vigil, Tony Drypolcher

Special nuclear material (SNM) in the Los Alamos National Laboratory (LANL) inventory that has been declared excess to programmatic needs is comprised of a large variety of chemical and physical forms. Many of these nuclear material items have been identified by the Defense Nuclear Facilities Safety Board (DNFSB) as a potential high risk to LANL workers and have been targeted for stabilization in recommendations DNFSB 94-1 and 00-1. In addition, vault space at the LANL Plutonium Facility is at a premium due to various ongoing programmatic missions and a lack of available disposition pathways. For these reasons LANL requested, and was granted by Department of Energy (DOE), a variance to terminate safeguards on attractiveness level D SNM items meeting the variance criteria. Materials meeting these criteria have been brought from the vault to the operating floor and opened in a hood or the glovebox line. Each item is inspected by a subject matter expert to: 1) verify there is no programmatic need for the item, and 2) determine if the item should be discarded as waste or sent for recovery. Items selected for discard are inspected by waste management personnel to ensure they meet the Waste Isolation Pilot Plant (WIPP) criteria for acceptance. This includes verification of the acceptable knowledge as well as the absence of items prohibited for disposal at WIPP. The item(s) are sent to waste management for packaging and certification for final transfer to WIPP. This poster presents an overview of the LANL Plutonium Facility disposition effort and progress to date.



**Vault Storage**



**Items For Introduction**



**Items To Be Opened  
Inside Hood**





**Bagging Out Verified Items**



**TA-55 Standard Packaging**



**Filtered Bags Required**



**Disposal Item**



**Inner Can**



**Old Bag out with Item**



**Inner Containment**



**Opening Item For Introduction**



**Bag out with Item**

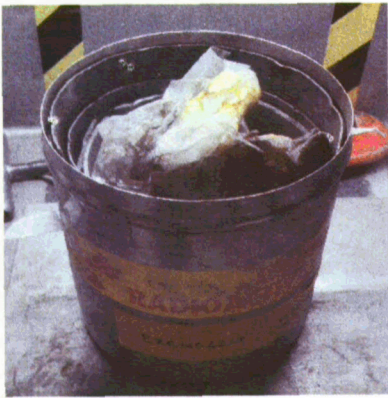


**Item Removal**



**Verifying Integrity Of Bag out Bag**





**Visual Inspection  
Of Item With Waste  
Management NMT-7**



**Visual Inspection  
Of Item With Waste  
Management NMT-7**



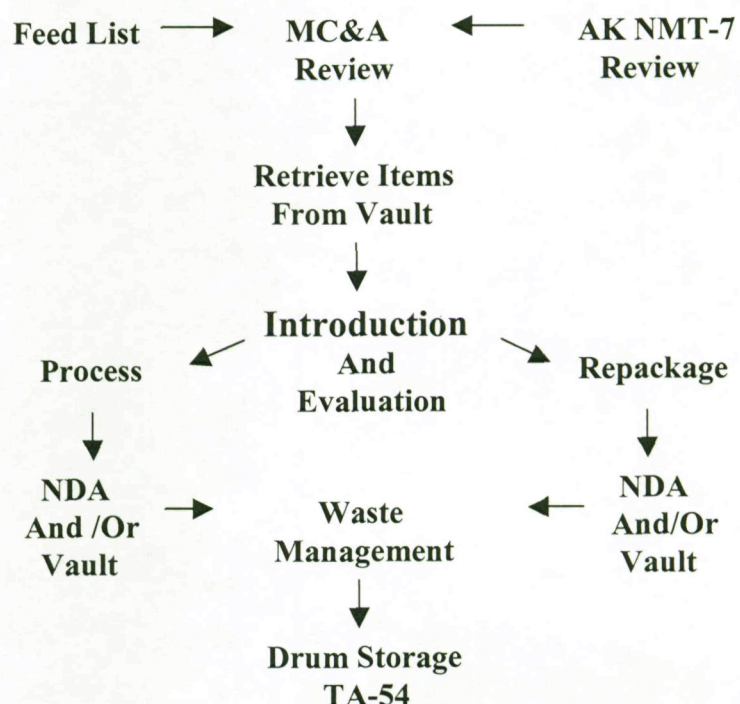
**Visual Inspection  
Of Item With Waste  
Management NMT-7**



**Drum Configuration  
Targeted Materials**



**Drum Storage Ready For Shipment  
Flow Chart**



IDES	Matrix Description
1	K00 Misc Combustible
1	K15 Cellulose Rags
1	K60 Paper/Wood
1	N05 Asbestos
1	N24 Filter Media
1	N27 Fire Brick
1	N33 Heating Mantles
1	N35 HEPA Filters
1	N48 Leaded Gloves
1	N69 Resin
1	N70 Rubber
1	R04 Al2O3
1	R10 CaO
1	R59 Oxalate Precipitate
2	N29 Glass
2	N31 Graphite
2	N50 MgO
2	N55 Non-Actinide Metal
2	N67 Plastics/Kim Wipes
2	R09* Calcium Salt
2	R18 Cemented in Drum
2	R41 Hydroxide Precipitate
2	R42 DOR Salt
2	R78 Sweepings/Screenings
3	C13 Carbide
3	C19 Chloride
3	C21 Oxide
3	C80 Tetrafluoride
3	M44 Unalloyed Metals
3	M74 Alloyed Metal
3	R03 Hydrogenous Salt
3	R12 Calcium Metal
3	R26 Filter Residue
3	R47 Incinerator Ash
3	R65 ER Salt
3	R71 Misc Salt
3	R83 MSE Salt



## Package Survey Instructions

**Scope:** This form will be used to collect data on LANL nuclear material packages. The data will be collected in a database and used to **PREDICT AND PREVENT FUTURE PACKAGE FAILURES**. Thus, it is important to collect as much accurate data as possible. Please return this form to your supervisor.

### Use this form when:

- Verifying package type and integrity
- Repackaging nuclear materials
- Packaging materials for discard to WIPP
- Opening an item for processing
- In conjunction with MC&A Inventory

Please use the photographs provided below as a guide to filling out the form:

### Photos & Definitions of Typical Package Conditions

#### Punctured

Penetrations of any size, shape or form with the exception of allowable filtered penetration, or filters, which may leak material due to a penetration or loose tape attaching the filter.



Bulging Condition

A food pack container shall be considered bulged if any portion of the lid other than the rim touches a straight edge placed across the rim or sidewall is visibly not straight.

#### Dented

Deformation of the double seam or side seam of food pack, can, or in the surface of the can with sharp crease, pinch point, or stress lines.



Corroded

Corrosion, either thin slight surface rust, which appears to threaten container integrity, such as visible pitting or flakes of rust.

A container shall be considered "pancaked", if the side walls are dented in a manner that appears to indicate negative pressure or depressurization of the container.

### Photos & Definitions of Package Types



ARDS Inner ARDS Outer RTG Clamp Top Container Flashlight Food Pack Can



Screw Top Container Intrinsically Sealed Non-Standard Skip Lid Pressure Cooker

ALL FIELDS ARE REQUIRED IF INFORMATION IS AVAILABLE

## Package Survey

TURN SHEET OVER FOR INSTRUCTIONS

Inspector Name:  CF  Date Inspected:

### Reason for Inspection

Unknown  
Reason  
Rep  
Visual Inspection

Complete  
This Portion  
For R&P Only

- ☐ All Complete
- ☐ Item Meets Criteria
- ☐ Item Meets Criteria
- ☐ Item Meets Criteria

Potential Contamination  
Date Retrieved From Vault

### Outer Container

Outer Container Contaminated? ☐

Outer Shielding ☐

Outer Shielding Type

Lead  
Pb  
Tin

Outer Container Type

Welded  
Slip-Lid (SS)  
Slip-Lid (Ti)  
Paint Can  
Food Pack  
Other

Outer Condition

Dented  
Cracked  
Corroded  
Punctured  
Bulging  
Punctured  
Liquid on Outside  
Residue on Outside  
Other, Please Comment

Tape Placement

Around Lid  
Around Top  
Both

Tape Condition

OK  
Like New  
Discolored  
BRIEC  
Properly Adhering  
Not Properly Adhering  
Other, Please Comment

Outer Lid Placement

On Properly  
Off Axis  
Other, Please Comment

### Lid ID

SNM MT  
Net Wt: Net Wt:  
Net Wt: Net Wt:

### Inner Container

Inner Container Contaminated? ☐

Inner Shielding ☐

Inner Shielding Type

Lead  
Pb  
Tin

Break of Outer Container

Rust  
Liquid  
Other, Please Comment

Condition of Bag and Seal

Like New  
Bulging  
Damaged  
Attached to Can  
Loose Tape  
Rips  
Condition of Seam  
Other, Please Comment

Inner Container Type

Slip-Lid (SS)  
Slip-Lid (Ti)  
Paint Can  
Food Pack  
Welded  
Glass  
Plastic

Tape Condition

Like New  
Discolored  
BRIEC  
Properly Adhering  
Not Properly Adhering  
Other, Please Comment

Inner Container Condition

Like New  
Dented  
Cracked  
Corroded  
Discolored  
Bulging  
Bulging  
None of the Above

### Final Package

Beta/Gamma  
Before Shielding  
(mks), in contact

0

Beta/Gamma  
After Shielding  
(mks), in contact

0

More than to NCA

Item Will Proceed To:

WIPP  
Storage  
Process Plant

Waste Management ID

Final Outermost  
Container Type:

Filtered Vault, Container, Screw Top

Filtered Vault Container, Clamp Top

WIPP Drum

ARDS Inner

ARDS Outer

DCS

Flashlight

Pressure Cooker

RTG

Heat Source

Canister

Food Pack

Slip Lid

Other, Please Specify

Additional Observations

Comments



# Package Survey Instructions

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- Opening an item for processing
- In conjunction with MC&A Inventory

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## Photos & Definitions of Typical Package Conditions

### Punctured

Penetrations of any size, shape or form with the exception of allowable filtered penetration, or filters, which may leak material due to a penetration or loose tape attaching the filter.



### Bulging Condition

A food pack container shall be considered bulged if any portion of the lid other than the rim touches a straight edge placed across the rim or sidewall is visibly not straight.



### Corroded

Corrosion, other than slight surface rust, which appears to threaten container integrity, such as visible pitting or flakes of rust.

### Dented

Deformation of the double seam or side seam of food pack, cans, or in the surface of the can with sharp crease, pinch point, or stress lines.



### Paneled Condition

A container shall be considered 'paneled', if the side walls are dented in a manner that appears to indicate negative pressure or depressurization of the container.

## Photos & Definitions of Package Types



ARIES Inner



ARIES Outer



RTG



Clamp Top Container



Flashlight



Food Pack Can



Screw Ton Container



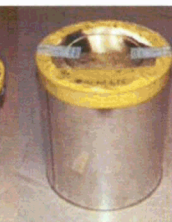
Intrinsically Sealed



Non-Standard



Slip Lid



Pressure Cooker



ALL FIELDS ARE REQUIRED IF  
INFORMATION IS AVAILABLE

# Package Survey Form

TURN SHEET OVER FOR  
INSTRUCTIONS

Inspector Name Nancy Gallegos Z# 97073 Date Inspected 2/11/2004

## Reason for Inspection

### Process

Repack

REP

Vault Inspection

**Complete  
This Portion  
For REP Only**

- ☒ AK Complete  
☐ Item Meets Criteria  
☐ Item Hazardous

Potential Contaminants

None

Date Retrieved From Vault

2/10/2004

## Outer Container

Outer Contamination? ☐

Outer Shielding ☐

### Outer Shielding Type

Lead

Pewter

### Outer Container Type

Welded

Slip-Lid(SS)

Slip-Lid(Tin)

Paint Can

Hagan

Drum

Food Pack

### Outer Condition

Dented

Cracked

Corroded

Discolored

Bulging

Punctured

Liquid on Outside

Residue on Outside

Other, Please Comment

### Tape Placement

Around Lid

Across Top

Both

### Tape Condition

N/A

Like New

Discolored

Brittle

Properly Adhering

Not Properly Adhering

Other, Please Comment

### Outer Lid Placement

Set Properly

Off Axis

Other, Please Comment

## Lot ID

JU07-9099

SNM

MT

9

52

Net Wt:

MCode:

10

PAN1

## Final Package

### Beta/Gamma Before Shielding

(mRem) @ contact

0

### Beta/Gamma After Shielding

(mRem) @ Contact

0

☐ Item sent to NDA

Item Will Proceed To:

WIPP

Storage

Process Floor

Waste Management ID

METCA81

### Final Outermost Container Type:

Filtered Vault Container, Screw Top

Filtered Vault Container, Clamp Top

WIPP Drum

ARIES Inner

ARIES Outer

3013

Intrinsically Sealed

Flashlight

Pressure Cooker

RTG

Sealed NDA Source

Conflat

ZPPR Plates

Food Pack

Paint Can

Slip Lid

Other, Please Specify

## Inner Container

Inner Container Contaminated? ☐

Inner Shielding ☐

### Inner Shielding Type

Lead

Pewter

### Inside of Outer Container

Rust

Liquid

Other, Please Comment

### Condition of Bag and Tail

Like New

Brittle

Darkened

Adhering to Can

Loose Tape

Rips

Condition of Seam

Other, Please Comment

### Inner Container Type

Slip-Lid(SS)

Slip-Lid(Tin)

Paint Can

Food Pack

Welded

Glass

Plastic

### Tape Condition

No Tape

Like New

Discolored

Brittle

Properly Adhering

Not Properly Adhering

Other, Please Comment

### Inner Container Condition

Like New

Dented

Cracked

Corroded

Discolored

Bulging

Punctured

None of the Above

Additional Observations:

ITEM WILL NEED TO BE PROCESSED BY CINDY OR VONDA